

Notes on some Corvidae from Nepal, Pakistan, and India

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The following observations were made during a study of the Corvidae collected by the Harvard-Yale Expedition (1957-59) in the region about Pokhara, central Nepal, in the vicinity of Darjeeling, India, in various localities throughout East Pakistan, and in northern West Pakistan.

ACKNOWLEDGEMENTS

For permission to collect and for assistance in many ways I am grateful to the Ministry of Foreign Affairs of Nepal and to the Zoological Surveys of Pakistan and of India. A. R. Ranjha and M. S. U. Siddiqi were of particular help in our work in Pakistan, as was H. Khajuria in India.

I am indebted to the following for lending specimens in their care: James D. Macdonald of the British Museum (Natural History), Robert W. Storer of the Museum of Zoology of the University of Michigan, Melvin Traylor of the Chicago Natural History Museum, and Charles Vaurie of the American Museum of Natural History.

Humayun Abdulali, Honorary Secretary of the Bombay Natural History Society, very generously provided me with descriptions and measurements of that institution's series of *Dendrocitta vagabunda*.

DENDROCITTA VAGABUNDA

Dendrocitta vagabunda exhibits much seasonal, individual, and geographical variation. In spite of the fact that it is a relatively common bird over much of the Indian sub-continent, it has not been collected systematically, either geographically or seasonally. Its patterns of variation are, therefore, difficult to analyse and the present study can only attempt to outline the trends and problems.

The following seems to be the general pattern of variation. The birds from Bengal, nominate *vagabunda*, are of moderate size and richly

coloured. North-westward in the lower ranges of the Himalayas the birds remain generally dark, but there is a cline toward larger size which reaches its extreme in the westernmost Himalayas. From Bengal westward in the plains there is a trend toward paler coloration and larger size, but the extreme size of the north-west Himalayas is nowhere reached. South-westward the cline is toward paler and smaller birds, with the smallest birds of the sub-continent (*D.v. parvula*)¹ occurring on the west coast from Mangalore to Cape Comorin.

Blyth (1846, p. 30), the first to be aware of geographical variation in the species, described *pallida* from a specimen in a collection of birds purchased in Calcutta and said to have come from the 'Western Himalaya'. The form was described as differing from '*rufa*' (now nominate *vagabunda*) in its paler colouring and 'considerably smaller size'. The wing length was given as five and one half inches (140 mm.) and the tail as eight and three-quarter inches (222 mm.).

Ticehurst (1922, p. 537), in examining a large series of Indian tree-pies, mainly from the north, concluded that while *pallida* is distinguished from *vagabunda* by its paler colour, it is not much smaller, as Blyth noted, but is 'considerably larger'. He named Simla as the type locality for *pallida* and Calcutta as the type locality for *vagabunda*.

Ticehurst's assumption that Blyth erred in describing *pallida* as a small bird, and his designation of Simla as the type locality, seem to be two unfortunate errors.

Although Blyth's bird was said to have come from the Himalayas, his description fits *D. v. parvula* of the south-west coast, or possibly *D. v. vernayi* of southern and south-eastern India. Both these races are paler than nominate *vagabunda* and are smaller, with their size range encompassing the measurements (wing 140 mm. ; tail 222 mm.) given in the original description of *pallida*.

Designating Simla as the type locality of *pallida* compounded the error, since this falls within the range of a large and dark Himalayan population which ranges from the vicinity of Hazara District, or possibly somewhat farther north-west, south-eastward roughly to Dehra Dun.

While it seems probable that the type of Blyth's *pallida* was a specimen of the race now known as *parvula*, or possibly of *vernayi*, some element of doubt remains since it is impossible to be certain that Blyth's bird did not come from the 'Western Himalaya'. It could, conceivably, have been an unusually small specimen from the western lower foothills. I am, therefore, reluctant to shift the name *pallida* from the population

¹ Whistler & Kinnear (1932) described *parvula* as being much smaller than *vagabunda* but similar to it in colour. However, Abdulali (*in litt.*) informs me that the three specimens of *parvula* in the Bombay Natural History Society's collection are considerably paler than the nominate form, and in fact are very close to *pallida*. I have seen no specimens of *parvula*.

of the north-western region of the sub-continent, where it has been applied for more than 100 years, to either of the races of the south. The best course would appear to be to designate a new type locality for *pallida* since Simla, within the range of a large dark form in no way resembling *pallida*, certainly could not have been the provenance of Blyth's specimen. I hereby designate Galkund, Surat Dangs, as the type locality of *pallida*. This locality falls within the range of a moderate size, pale population much more nearly approaching Blyth's description.

The large, dark birds of the north-western Himalayas lack a name and for these I propose :

***Dendrocitta vagabunda bristoli* subsp. nov.**

Type : Adult male, No. 185, 365, Museum of Comparative Zoölogy, Harvard College, Cambridge, Massachusetts, collected at Jabri (c. 11 miles west of Murree), alt. 900 metres, Hazara District, West Pakistan, by Raymond A. Paynter, Jr., 17 December 1958.

Diagnosis : The largest of the races of *D. vagabunda*, nearest to *pallida*, but with a considerably longer tail and a somewhat longer wing ; richly coloured, but slightly paler than the nominate form.

Range : Lower ranges of the westernmost Himalayas from Hazara District, West Pakistan, south-east to the vicinity of Dehra Dun, India.

Measurements : The wing and tail measurements of the type are 177.0 and 363.0 mm. respectively ; these measurements for two adult male topotypes are 174.0 and 342.0 mm., and 179.0 and 334.0 mm. The wings of three adult female topotypes are 174.0, 166.0, and 163.0 mm. ; the tails of the former two are 349.0 and 312.0 mm.

Remarks : The characters of the race are most pronounced at the north-western limit of its range, which probably is also the limit of the distribution of the species. To the west, south, and south-east there are marked clines toward the contiguous races *D. v. pallida* and *D. v. vagabunda*.

The race is named for Melvin Lee Bristol who, with enthusiasm and industry, did much to make the Harvard-Yale Expedition a success.

Specimens Examined : *bristoli* : 12 ♂, 10 ♀, and 4 ? from Jabri, Hazara Dist. ; Rawalpindi Dist. ; Jhelum Dist. ; Kangra ; Simla ; and Dehra Dun. *pallida* : 28 ♂, 19 ♀, and 13 ? from ' plains near Ambala ' ; Lahore ; Keshapur ; Ludhiana ; Ferozepore ; Sargodha ; Surat Dangs ; Sirohi ; Kathiawar ; Junagadh ; Hyderabad (Sind) ; Khinjar Lake (Sind) ; Soneri Lake (Sind) ; and Kohat. *vagabunda* : 5 ♂, 6 ♀, and 1 ? from vicinity of Pokhara (central Nepal) ; Bastar Dist. ; Cachar ; and Sylhet Dist.

In addition to the above series, Humayun Abdulali sent me descriptions and measurements of 16 males and ten females, representing all

TABLE I

Measurements of adults of the races of *Dendrocitta vagabunda* on the Indian Sub-continent

Character	Race	Sex	No. of specimens	Mean	S _x	Range	
Wing (flattened)	<i>bristoli</i>	♂	12	169.9 mm.	2.1	157.0—179.0 mm.	
		♀	7	163.8	1.5	158.0—174.0	
	<i>pallida</i>	♂	38	161.3	0.8	149.0—172.5	
		♀	28	153.5	1.0	144.0—165.0	
	<i>vagabunda</i>	♂	13	153.6	1.6	146.0—168.0	
		♀	7	153.5	1.1	136.5—161.0	
	<i>vernayi</i>	♂	2	147.5	—	146.0—149.0	
		♀	3	144.3	3.1	138.0—149.0	
	<i>parvula</i>	♂	2	139.5	—	136.0—143.0	
		♀	2	136.0	—	131.0—141.0	
	Tail	<i>bristoli</i>	♂	11	312.6	9.4	265.0—363.0
			♀	5	304.5	14.0	269.0—349.0
<i>pallida</i>		♂	36	262.3	3.1	217.5—297.0	
		♂	27	243.7	3.1	219.0—279.0	
<i>vagabunda</i>		♂	12	237.9	4.2	216.0—263.0	
		♀	5	224.6	7.1	207.0—240.0	
<i>vernayi</i>		♂	2	211.5	—	200.0—223.0	
		♀	2	188.0	—	187.0—189.0	
<i>parvula</i>		♂	1	184.0	—	—	
		♀	2	202.0	—	201.0—203.0	
Weight		<i>bristoli</i> (type locality)	♂	3	143.5 gm.	1.6	140.6—146.2 gm.
			♀	3	132.0	6.8	119.5—143.0
	<i>vagabunda</i>	♂	3	119.0	4.9	112.0—128.3	
		♀	3	107.0	5.8	98.3—117.8	

five of the sub-continental races, contained in the collections of the Bombay Natural History Society.

NUCIFRAGA CARYOCATACTES

In a review of the Himalayan races of the Nutcracker, Biswas (1950) states that *N. c. yunnanensis*, now considered a synonym of *macella* (vide Vaurie, 1954), could be differentiated from *hemispila* by its darker colour, smaller spots, and heavier bill. Vaurie (1959) distinguished *macella* from *hemispila* by these same characters, noting also that the frequency of spotting was reduced; he omitted mention of a difference in bill size.

I concur that *yunnanensis* should be merged with *macella*, but I find *macella* a relatively weak race, not nearly so distinct from *hemispila* as would seem to be indicated by earlier workers. No difference in bill size is apparent in the 35 specimens of both races examined by me. Colour is an extremely variable character, as noted by Sanford & Mayr (1940), with pronounced seasonal changes, as well as foxing, obscuring any differences which might exist between the races. There remain as characters only the size and frequency of the spots. I agree that the spotting is heavier and more numerous in *hemispila* than in *macella*, although even these characters are variable.

Biswas (1950) believed that birds from Nepal, Sikkim, Darjeeling, Bhutan, south-eastern Tibet, northern Assam, and northern Burma were referable to *yunnanensis* (now *macella*), rather than to *hemispila* which has long been considered to range from about Kashmir eastward through the Himalayas. Vaurie (1959) followed Biswas in listing *macella* as the form from Nepal eastward. My eastern Himalayan material is limited to five fresh specimens from Darjeeling District; these are definitely *hemispila*. Rand & Fleming (1957) referred their series of nine birds from central Nepal to *hemispila* also. Thus it appears, contrary to Biswas (1950) and Vaurie (1959), that *hemispila* occurs east at least to Darjeeling.

CORVUS MACRORHYNCHOS

C. m. intermedius, the race extending from Afghanistan through the Himalayas to Nepal, differs from *levaillantii*, the form of Assam, West Bengal, East Pakistan, the Andamans, Burma, and northern Thailand, in having a distinctly longer tail and shorter, thicker bill, and a somewhat longer wing (Table II). This follows the usual pattern wherein most montane races have longer wings and tails, and shorter bills (Allen's rule), than their lowland counterparts.

It is generally assumed that any intraspecific differences in the linear dimensions of the wings and tail reflect differences in body size (=weight). In other words, a long-winged, long-tailed race is presumed to be a heavier-bodied form than a short-winged, short-tailed race. While this assumption is valid in the majority of instances, an increase in body mass is not necessarily always accompanied by an increase in the length

of the wings and tail, or vice versa. The linear measurements of these appendages may remain relatively constant while body weight varies. This has been documented by Amadon (1943).

TABLE II
Measurements of adults of *Corvus macrorhynchos levaillantii*
and *C. m. intermedius*

Character	Race	Sex	No. of specimens	Mean	$S_{\bar{x}}$	Range
Wing (flattened)	<i>levaillantii</i>	♂	3	326.1 mm.	8.7	308—335 mm.
		♀	9	307.1	5.3	280—329
	<i>intermedius</i>	♂	7	335.9	3.9	320—349
		♀	10	323.9	2.9	309—338
Tail	<i>levaillantii</i>	♂	3	190.0	5.2	181—190
		♀	8	178.7	3.7	165—192
	<i>intermedius</i>	♂	6	219.2	4.7	199—241
			10	204.9	3.0	185—215
Culmen (from base)	<i>levaillantii</i>	♂	3	68.0	.6	67—69
		♀	9	62.2	.5	60—65
	<i>intermedius</i>	♂	7	60.7	.6	58—63
		♀	10	55.0	.8	50—59
Weight	<i>levaillantii</i>	♂	3	602.2 gm.	23.7	554.8—625.6 gm.
		♀	9	502.0	16.4	419.3—565.7
	<i>intermedius</i>	♂	7	522.4	15.1	460.4—582.3
		♀	10	456.3	9.6	392.0—495.1

The next step beyond a positive relation between wing and tail length and the body mass, or stage where there is no change in appendicular measurements while there is variation in weight, is that of a negative relation between weight and the size of the wings and tail. This is clearly demonstrated by a series of *C. m. intermedius* from East Pakistan and a series of *C. m. levaillantii* from central Nepal and from Swat, Kurram Agency, and Hazara District, West Pakistan (Table II). Here the long-winged, long-tailed montane race is distinctly smaller in body mass than the short-winged, short-tailed lowland form. The significance of this phenomenon is obscure. I am not aware of it having been documented before, but similar situations undoubtedly will be found when the weights of birds are better known.

WEIGHTS OF SOME CORVIDAE

There are few data available on the weights of Asiatic birds, although this is an area of research of considerable interest and potential importance. Future students may find the following compilation of use :

TABLE III
Weights of adults of some Corvidae from the Indian Sub-continent

	Sex	No. of specimens	Mean	S _x	Range	Locality
<i>Garrulus glandarius interstinctus</i>	♂	1	gr. 128.8	—	gr. —	Darjeeling Dist., India.
<i>Garrulus lanceolatus</i>	♂	7	103.5	1.7	97.2—108.5	Pokhara, Nepal ; Kaghan Valley, Kurram Agency, and Swat, W. Pak.
	♀	4	96.9	2.7	90.8—103.0	
<i>Urocissa flavirostris cucullata</i>	♂	2	163.4	—	162.6—164.2	Vicinity Pokhara, Nepal; Kaghan Valley, W. Pak.
	♀	2	153.1	—	143.7—162.5	
<i>Urocissa flavirostris flavirostris</i>	♀	2	137.4	—	131.8—143.0	Darjeeling Dist., India.
<i>Urocissa erythrorhyncha occipitalis</i>	♂	3	214.7	8.2	205.0—231.1	Pokhara and vicinity Nepal.
	♀	2	201.5	—	195.8—207.2	
<i>Cissa chinensis chinensis</i>	♂	2	132.7	—	132.0—133.4	Pokhara, Nepal; Kalimpong Dist., India.
	♀	3	122.3	1.2	120.0—124.0	
<i>Dendrocitta formosae occidentalis</i>	♀	1	104.4	—	—	Hazara Dist., W. Pak.
<i>Dendrocitta formosae himalayensis</i>	♂	22	106.4	1.5	90.3—121.0	Pokhara and vicinity Nepal; Chittagong Hill Tracts, E. Pak. ; Kalimpong Dist., India.
	♀	12	99.3	2.0	89.0—105.9	
<i>Pica pica bactriana</i>	♂	1	248.7	—	—	Kurram Agency, W. Pak.
	♀	5	203.0	4.6	190.3—211.7	
<i>Nucifraga caryocatactes multipunctata</i>	♂	1	190.7	—	—	Kaghan Valley and Swat, W. Pak.
	♀	3	159.1	5.7	147.8—165.4	
<i>Nucifraga caryocatactes hemispila</i>	♂	2	209.6	—	205.6—213.7	Darjeeling Dist., India.
	♀	2	183.8	—	183.3—184.3	
<i>Pyrrhocorax graculus digitatus</i>	♂	1	243.7	—	—	Kaghan Valley, W. Pak.
	♀	1	208.1	—	—	
<i>Corvus monedula soemmerringii</i>	♂	1	265.0	—	—	Kaghan Valley, W. Pak.
	♀	1	235.0	—	—	
<i>Corvus splendens splendens</i>	♂	2	336.0	—	310.0—362.1	Pokhara and vicinity Nepal; Sundarbans, E. Pak.
	♀	5	277.8	8.7	252.0—304.5	

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